

ASSIGNMENT 13

Textbook Assignment: "Aircraft Metallic Repair," chapter 13, pages 13-1 through 13-53, and "Aircraft Nonmetallic Repair," chapter 14, pages 14-1 through 14-48.

13-1. Mallet heads are constructed from all EXCEPT which of the following materials?

1. Brass
2. Steel
3. Rawhide
4. Plastic

13-2. The shape of the bucking bar to be used on a particular riveting job is determined by which of the following factors?

1. The size of the rivets to be driven
2. The location of the rivets to be driven only
3. The accessibility of the rivets to be driven only
4. The location and accessibility of the rivets to be driven

13-3. Machine countersinking is used to flush rivet sheets of what minimum thickness?

1. 0.064 in.
2. 0.060 in.
3. 0.055 in.
4. 0.048 in.

IN ANSWERING QUESTIONS 13-4 THROUGH 13-6, SELECT FROM COLUMN B THE RIVET GUN THAT MATCHES ITS USE LISTED IN COLUMN A. NOT ALL ITEMS LISTED IN COLUMN B WILL BE USED.

<u>A. USE</u>	<u>B. RIVET GUN</u>
13-4. Used in confined spaces	1. Squeeze riveter
13-5. Used for heavy riveting	2. Corner riveter
13-6. Used for driving medium-sized rivets	3. One-shot gun
	4. slow-hitting gun

13-7. The dies of hot dimpling machines are maintained at a specific temperature by which of the following devices?

1. Hot air machines
2. Steam generators
3. Electric heaters
4. Catalytic converters

13-8. Squaring shears can be used to perform all EXCEPT which of the following cutting operations?

1. Squaring
2. Notch cutting
3. Multiple cutting
4. Cutting to a line

13-9. Which of the following sheet metal bending equipment has a series of removable fingers of varying widths?

1. A box and pan brake
2. A cornice brake
3. A bar folder
4. A bench vise

13-10. To allow the lines to stand out more clearly when laying out sheet metal patterns, you should use which of the following items?

1. A felt marker
2. Layout fluid
3. A ball-point pen
4. A graphite pencil

IN ANSWERING QUESTION 13-11, REFER TO FIGURE 13-30 IN THE TEXTBOOK.

13-11. The longer part of a formed angle is known by what term?

1. Leg
2. Flat
3. Flange
4. Bend line

13-12. You can hand form sheet metal by using which of the following devices?

1. A bar folder
2. A cornice brake
3. A box and pan brake
4. A stake plate and stakes

13-13. When hand forming a convex bend where no wrinkles or marring is allowed, you should use a vise, forming block, and which of the following tools?

1. A lead bar
2. A steel bar
3. A plastic mallet
4. A rawhide mallet

- 13-14. Which of the following rotary machine-rolling operations is generally the most difficult to perform?
1. Wiring
 2. Beading
 3. Burring
 4. Crimping
- 13-15. When using flush-head rivets, you are required to have what minimum edge distance?
1. 1 1/2 times the rivet length
 2. 2 1/2 times the rivet length
 3. 1 1/2 times the rivet diameter
 4. 2 1/2 times the rivet diameter

IN ANSWERING QUESTION 13-16, REFER TO TABLE 13-2 IN THE TEXTBOOK.

- 13-16. To properly drill a hole for a 1/8-inch rivet, you should use what number drill bit?
1. No. 11
 2. No. 21
 3. No. 30
 4. No. 41
- 13-17. You are using a CP350 blind rivet pull tool and want to change the rivets from universal heads to countersunk heads without changing the rivet diameter. Which of the following blind rivet pull tool components will you need to change?
1. The chuck jaws
 2. The outer anvil
 3. The inner anvil
 4. The inner anvil thrust bearing
- 13-18. The installation, inspection, and removal procedures for cherrylock rivets are basically the same for which of the following types of rivets?
1. Huck
 2. Flush
 3. Solid
 4. Hi-shear

IN ANSWERING QUESTIONS 13-19 THROUGH 13-21, SELECT FROM COLUMN B THE TYPE OF DAMAGE THAT BEST DESCRIBES THE CAUSE LISTED IN COLUMN A. NOT ALL ITEMS LISTED IN COLUMN B WILL BE USED.

	<u>A. CAUSE</u>	<u>B. DAMAGE</u>
13-19.	Hard landings or violent maneuvers	1. Combat
		2. Stress
13-20.	Small cracks resulting from vibration	3. Fatigue
		4. Foreign
13-21.	Tools or hardware left adrift around turning engines	

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- 13-22. You are investigating the damage to an aircraft caused by a fire. To determine if the aircraft's metal has lost any of its strength characteristics, you should use which of the following inspection methods?
1. NDI
 2. Hardness testing
 3. Visual inspection
 4. Inspection for cracks
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IN ANSWERING QUESTIONS 13-23 THROUGH 13-25, SELECT FROM COLUMN B THE DAMAGE CLASSIFICATION THAT BEST MATCHES THE REPAIR LISTED IN COLUMN A. NOT ALL ITEMS LISTED IN COLUMN B WILL BE USED.

	<u>A. REPAIR</u>	<u>B. DAMAGE</u>
13-23.	Splice a new section in the damaged area	1. Negligible damage
		2. Damage requiring replacement
13-24.	Remove a small dent from the damaged area	3. Damage repairable by patching
		4. Damage repairable by insertion
13-25.	Install new metal to reinforce the damaged area	

- 13-26. When several replacement parts need to be fabricated, which of the following items should you use to speed production time and ensure a high degree of uniformity?
1. Designs
 2. Drawings
 3. Templates
 4. Blueprints
- 13-27. A skin repair to a semicritical area of an aircraft requires what percentage of the damaged area's original strength to be replaced?
1. 50%
 2. 60%
 3. 70%
 4. 80%
- 13-28. The edges of a lap patch are normally chamfered to what degree of angle?
1. 45°
 2. 49°
 3. 55°
 4. 63°
- 13-29. Generally, when fabricating a flush patch, you should have what maximum clearance between the skin and the filler?
1. 1/4 in.
 2. 1/8 in.
 3. 1/16 in.
 4. 1/32 in.
- 13-30. When performing a flush access door installation to attach the cover plate to the doubler, you should use what type of fasteners?
1. Rivnuts
 2. Hi-lok rivets
 3. Machine screws
 4. Flush head jo-bolts
- 13-31. When an aircraft skin is being replaced without the use of a template, which of the following methods of marking the new skin should NOT be used to duplicate the rivet holes in the old section?
1. A scribe
 2. A hole finder
 3. A soft pencil
 4. A transfer punch and hammer
- IN ANSWERING QUESTION 13-32, REFER TO FIGURE 13-67 IN THE TEXTBOOK.
- 13-32. What is the minimum length for the reinforced splice?
1. Four times the length of the leg of the stringer for each side of the damaged area
 2. Four times the width of the leg of the stringer for each side of the damaged area
 3. Two times the length of the filler splice
 4. Two times the width of the filler splice
- 13-33. What structures serve to transmit stresses from the aircraft's skin and are used to give shape and rigidity?
1. Ribs
 2. Spars
 3. Bulkheads
 4. Stringers
- 13-34. For aircraft applications, all EXCEPT which of the following features is an advantage of plastic over glass?
1. Its ease of repair
 2. Its ease of fabrication
 3. Its lightness in weight
 4. Its ability to resist scratches
- 13-35. What term refers to small surface fissures that develop on plastic materials?
1. Hazing
 2. Glazing
 3. Crazeing
 4. Cracking
- 13-36. Upon finding a section of plastic material that is crazed, what action, if any, should you take to correct the problem?
1. Buff it with polish
 2. Wipe it with naphtha
 3. Rub it with turpentine
 4. None
- 13-37. By sanding or buffing a plastic surface too long or too vigorously in one spot, you can cause which of the following problems?
1. Cracking or crazing
 2. Softening or burning
 3. Bleaching or glazing
 4. Discoloration or hazing

- 13-38. Standard buffing compounds on transparent plastics are usually composed of very fine alumina in combination with which of the following materials?
1. Wax only
 2. Tallow only
 3. Wax or tallow only
 4. Wax, tallow, or grease
- 13-39. When you mount plastic panels, what is the minimum prescribed thickness for the packing material?
1. 1/16 in.
 2. 1/8 in.
 3. 3/16 in.
 4. 1/4 in.
- 13-40. When repairing minor surface damage to reinforced plastics, you should apply which of the following materials to the damaged area?
1. Two coats of catalyzed resin heated to 112°F
 2. One or more coats of room-temperature catalyzed resin
 3. Three coats of paste composed of catalyzed resin and nylon fibers heated to 137°F
 4. One coat of room-temperature paste composed of catalyzed resin and short glass fibers
- 13-41. When using the stepped method to repair ply damage to solid laminates, which of the following procedures should you observe to ensure maximum strength of the repaired area?
1. Cut the replacement glass fabric pieces to an exact fit with the weave running in the same direction as the existing plies
 2. Ensure that the replacement pieces are slightly thicker than the existing plies
 3. Install the replacement pieces with the fabric plies overlapping the existing plies
 4. Replace every other piece of damaged fabric
- 13-42. A reinforced plastic component with a honeycomb core has damage that extends completely through one facing and into the core. What is the preferred method of repair for this component?
1. Plugged
 2. Stepped
 3. Scarfed
 4. Delaminated ply
- 13-43. The scarfed method is normally used to repair small punctures in reinforced plastics up to what maximum dimension?
1. 3 or 4 in.
 2. 5 or 6 in.
 3. 7 or 8 in.
 4. 9 or 10 in.
- 13-44. When repairing a puncture in a piece of reinforced plastic using the stepped method, what material should you use to cover the repair area while it cures?
1. Graphite grease
 2. Petroleum jelly
 3. Cellophane sheeting
 4. Aluminum barrier paper
- 13-45. Rain erosion-resistant coating MIL-C-7439, Class II, has an additional surface treatment included in the kit for what purpose?
1. To absorb radar waves
 2. To minimize radio noise
 3. To reflect ultraviolet light
 4. To lower its internal working temperature
- 13-46. A sandwich construction material is delaminated with facing-to-core voids of less than 2.5 inches in diameter. Which of the following repair methods should you use?
1. Apply a flush patch by using thick cloth soaked in Thermofoam 706
 2. Apply a coat of Thermofoam 706 to the surface and cover it with kraft paper
 3. Inject a nonexpandable forming resin into the drilled holes over the void area with a syringe
 4. Inject an expandable forming resin into the drilled holes over the void area with a pressure-type caulking gun

IN ANSWERING QUESTION 13-47, REFER TO FIGURE 14-17 IN THE TEXTBOOK.

- 13-47. The corners of the rectangular cutout must have what minimum radius?
1. 1/8 in.
 2. 1/4 in.
 3. 3/8 in.
 4. 1/2 in.
- 13-48. You are repairing a balsa wood core component. When you use two rows of rivets, the inner patch should overlap the hole in the core by what prescribed amount?
1. 1 in.
 2. 2 in.
 3. 3 in.
 4. 4 in.

IN ANSWERING QUESTION 13-49, REFER TO TABLE 14-1 IN THE TEXTBOOK.

- 13-49. Which of the following components of SH-60B aircraft are manufactured from advanced composite materials?
1. The gearboxes
 2. The scarf joints
 3. The upper canopies
 4. The horizontal stabilizers
- 13-50. Which of the following factors is a disadvantage of advanced composite materials over metals?
1. Repair capability
 2. Expense of materials
 3. Corrosion resistance
 4. Weight of the material
- 13-51. In an advanced composite material, what is the homogeneous resin binder known as?
1. Pulp
 2. Paste
 3. Matrix
 4. Laminate
- 13-52. The damage to advanced composite materials may be categorized in which of the following ways?
1. Natural
 2. Organic or physical
 3. Organic or environmental
 4. Physical or environmental

- 13-53. When performing a tap test on advanced composite materials, you should use a hammer that weighs about 3 ounces.
1. True
 2. False
- 13-54. A section of advanced composite material has water trapped in the honeycomb area. This is what class of repairable damage?
1. Class IV
 2. Class V
 3. Class VI
 4. Class VII
- 13-55. The drill motors used on advanced composite materials should be capable of what maximum speed?
1. 5,000 rpm
 2. 6,000 rpm
 3. 7,000 rpm
 4. 8,000 rpm
- 13-56. When working with advanced composite materials, which of the following personnel hazards should be your principal concern?
1. Contact with the dust on your hands
 2. Contact with the matrix on your clothing
 3. Inhalation of airborne dust and fibrous particles
 4. Inhalation of fumes before the matrix has completely cured
- 13-57. The flashpoints of solvents and resins for composite materials are usually around what minimum temperature?
1. 500°F
 2. 200°F
 3. 300°F
 4. 400°F
- 13-58. On Navy aircraft, the paint system is identified with a stencil or decal at what location?
1. On the right side of the aft fuselage
 2. On the left side of the aft fuselage
 3. On the right side of the upper wing
 4. On the left side of the upper wing

- 13-59. Which of the following statements pertaining to aircraft stripping is NOT correct?
1. The stripper should be spread in a thin coat
 2. The stripper should be applied with fiber brushes
 3. The aircraft should be located outside if possible
 4. The aircraft's joints or seams in the stripping area should be masked
- 13-60. Paint feathering may be accomplished with all EXCEPT which of the following items?
1. 240 grit aluminum oxide cloth
 2. 280 grit aluminum oxide cloth
 3. 320 grit aluminum oxide cloth
 4. Flap brush
- 13-61. After epoxy-polyamide primer is sprayed, it should be allowed to air dry for what minimum amount of time?
1. 15 min
 2. 30 min
 3. 45 min
 4. 60 min
- 13-62. You mixed aliphatic polyurethane paint and did not use it for more than 3 hours. Which of following problems will occur if you try to rethin the paint?
1. Fish eyes
 2. Dry spots only
 3. Orange peel only
 4. Dry spots or orange peel
- 13-63. The epoxy-polyamide topcoat is mixed in what ratio of (a) pigmented component to (b) clear resin?
1. (a) One (b) one
 2. (a) One (b) two
 3. (a) Two (b) one
 4. (a) Two (b) three
- 13-64. To obtain excellent adhesion, elastomeric rain erosion-resistant coating, MIL-C-7439, should be allowed to dry for what minimum number of days?
1. 5 days
 2. 6 days
 3. 7 days
 4. 8 days
- 13-65. When you lay out the blue border that outlines the entire design of the national insignia, the border should be what fractional part of the radius of the blue circle in width?
1. 1/16
 2. 1/8
 3. 3/16
 4. 1/4
- 13-66. A pressure-feed spray gun is designed to operate at (a) what fluid volume and (b) what air pressure?
1. (a) Low (b) low
 2. (a) Low (b) high
 3. (a) High (b) low
 4. (a) High (b) high
- 13-67. Prior to use, what component of a spray gun should be removed and treated with oil?
1. The air valve packing
 2. The fluid needle spring
 3. The fluid needle packing
 4. The trigger bearing screw
- 13-68. When spraying epoxy-polyamide and polyurethane finishes, you should hold the gun at what prescribed distance from the work?
1. 4 to 8 in.
 2. 6 to 10 in.
 3. 8 to 12 in.
 4. 10 to 14 in.
- 13-69. Which of the following spray gun problems causes dusting?
1. Excessive air pressure
 2. Excessive fluid pressure
 3. Insufficient air pressure
 4. Insufficient fluid pressure
- 13-70. Which of the following types of sealants set and cure by evaporation of the solvent?
1. Drying sealants
 2. Curing sealants
 3. Pliable sealants
 4. Flexible sealants
- 13-71. You should apply a sealant to a faying surface by what method?
1. A brush
 2. Spraying
 3. A spatula
 4. Injection

13-72. What type of sealing compound, MIL-S-81733, is applied with a spray gun?

1. Type I
2. Type II
3. Type III
4. Type IV